

WHAT IS CLAIMED IS:

1. A multi-function apparatus performing at least copying and facsimile functions, comprising:

5 a basic memory including at least a first image memory area for storing data of the copying function and a second image memory area for storing data of the facsimile function;

a socket for connecting an add-on expansion memory;

10 and

a controller configured to arrange memory assignments of said basic memory in accordance with a first memory map to effectively perform operations of the copying and facsimile functions when said expansion memory is not  
15 connected to said socket and to rearrange said memory assignments of said basic memory together with said expansion memory with an effect of expanding said first and second image memory areas of said basic memory in accordance with a second memory map to effectively perform  
20 said operations of the copying and facsimile functions when said expansion memory is connected to said socket.

2. A multi-function apparatus as defined in Claim 1, further comprising a backup battery that energizes said

basic memory while other power to said apparatus is turned off, wherein said second image memory area is allocated within said basic memory when said expansion memory is mounted to said socket.

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3. A multi-function apparatus as defined in Claim 1, wherein said controller returns an arrangement of the memory assignments from that in accordance with said second memory map to that in accordance with said first memory map  
10 when said expansion memory is removed from said socket.

4. A multi-function apparatus as defined in Claim 1, wherein said controller provides a user guidance with a warning that said expansion memory is connected to said  
15 socket while said second image memory area retains effective image data therein.

5. A multi-function apparatus as defined in Claim 1, wherein said controller provides a user guidance with a  
20 warning that said expansion memory is absent from said socket while said second image memory area retains effective image data therein.

6. A multi-function apparatus performing at least copying function and an optional facsimile function, comprising:

a basic memory including at least a first image  
5 memory area for storing data of the copying function;  
a socket for connecting an add-on expansion memory;  
and  
a controller configured to arrange memory assignments  
of said basic memory and said expansion memory in  
10 accordance with a predetermined memory map so that a second  
image memory area for the optional facsimile function is  
allocated within said basic memory when said expansion  
memory is connected to said socket and the optional  
facsimile function is added to said apparatus.

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7. A multi-function apparatus as defined in Claim 6, further comprising a backup battery that backs up said basic memory.

20 8. A multi-function apparatus as defined in Claim 6, wherein a memory size of said second image memory area is determined by a user.

9. A multi-function apparatus performing at least copying and facsimile functions, comprising:

first storing means for storing data of the copying function;

5 second storing means for storing data of the facsimile function;

connecting means for connecting an add-on expansion memory; and

controlling means for arranging memory assignments of  
10 said first and second storing means in accordance with a first memory map to effectively perform operations of the copying and facsimile functions when said expansion memory is not connected to said socket and for rearranging said memory assignments of said first and second storing means  
15 together with said expansion memory with an effect of expanding memory areas for said data of said first and second storing means in accordance with a second memory map to effectively perform said operations of the copying and facsimile functions when said expansion memory is connected  
20 to said connecting means.

10. A multi-function apparatus as defined in Claim 9, further comprising battery means for energizing at least said second storing means while other power to said

apparatus is turned off.

11. A multi-function apparatus as defined in Claim 9, wherein said controlling means returns an arrangement of the memory assignments from that in accordance with said second memory map to that in accordance with said first memory map when said expansion memory is removed from said connecting means.

12. A multi-function apparatus as defined in Claim 9, wherein said controlling means provides a user guidance warning that said expansion memory is connected to said connecting means while said area of said second storing means retains effective image data therein.

13. A multi-function apparatus as defined in Claim 9, wherein said controlling means provides a user guidance warning that said expansion memory is absent from said connecting means while said area of said second storing means retains effective image data therein.

14. A multi-function apparatus performing at least copying function and an optional facsimile function, comprising:

storing means for storing data of the copying  
function;

connecting means for connecting an add-on expansion  
memory; and

5       controlling means for arranging memory assignments of  
memory areas of said storing means and said expansion  
memory in accordance with a predetermined memory map so  
that a specific memory area for the optional facsimile  
function is allocated within said storing means when said  
10   expansion memory is connected to said connecting means and  
the optional facsimile function is added to said apparatus.

15       15.   A multi-function apparatus as defined in Claim  
14, further comprising backup battery means for energizing  
at least said storing means while other power to said  
apparatus is turned off.

16.   A multi-function apparatus as defined in Claim  
14, wherein a memory size of said specific memory area is  
20   determined by a user.

17.   A method for multi-function performance of at  
least copying and facsimile functions, comprising the steps  
of:

providing a basic memory including a first memory area for storing data of the copying function and a second memory area for storing data of the facsimile function;

preparing a socket for connecting an expansion

5 memory;

arranging memory assignments of said basic memory in accordance with a first memory map to effectively perform operations of the copying and facsimile functions when said expansion memory is not connected to said socket; and

10 rearranging said memory assignments of said basic memory together with said expansion memory with an effect of expanding said first and second memory areas storing said data of the copying and of facsimile functions in accordance with a second memory map to effectively perform  
15 said operations of the copying and facsimile functions when said expansion memory is connected to said socket.

18. A method as defined in Claim 17, further comprising a step of energizing at least said basic memory  
20 while other power to the multi-function performance is turned off.

19. A method as defined in Claim 17, further comprising a step of returning an arrangement of the memory

assignments from that in accordance with said second memory map to that in accordance with said first memory map when said expansion memory is removed from said socket.

5           20.    A method as defined in Claim 17, further comprising a step of providing a user guidance warning that said expansion memory is connected to said socket while said second memory area retains effective image data therein.

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          21.    A method as defined in Claim 17, further comprising a step of providing a user guidance warning that said expansion memory is absent from said socket while said second memory area retains effective image data therein.

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          22.    A method for multi-function performance of at least copying function and an optional facsimile function, comprising the steps of:

          providing a basic memory for storing data of the  
20   copying function;

          preparing a socket for connecting an add-on expansion memory;

          arranging memory assignments of memory areas of said basic memory and said expansion memory in accordance with a



predetermined memory map so that a specific memory area for  
the optional facsimile function is allocated within said  
basic memory when said expansion memory is connected to  
said socket and the optional facsimile function is made  
5 available.

23. A method as defined in Claim 22, further  
comprising a step of energizing at least said basic memory  
while other power for said multi-function performance is  
10 turned off.

24. A method as defined in Claim 22, wherein a  
memory size of said specific memory area is determined by a  
user.  
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25. A multi-function apparatus performing at least  
copying and facsimile functions, comprising:

a basic memory including at least first image memory  
provisions storing data related to the copying function and  
20 second image memory provisions storing data related to the  
facsimile function;

a coupling facility for selectively connecting add-on  
expansion memory provisions thereto; and

a controller communicating with said basic memory and

coupling facility and configured to arrange memory assignments of said basic memory in accordance with a first memory map to effectively perform operations of the copying and facsimile functions when said expansion memory

5 provisions are not connected to said coupling facility and to rearrange said memory assignments of said basic memory and to arrange memory assignment of said expansion memory provisions in accordance with a second memory map to thereby provide expanded memory resources for effectively  
10 performing said operations of the copying and facsimile functions when said expansion memory provisions are connected to said coupling facility.

26. A multi-function apparatus as in Claim 25,  
15 wherein said controller includes provisions for returning an arrangement of the memory assignments from an arrangement related to said second memory map to an arrangement related to said first memory map in response to removal of said expansion memory provisions from said  
20 coupling facility.

27. A multi-function apparatus as in Claim 25 including a unit providing status indications to users, wherein said controller includes provisions causing said

unit to indicate whether or not said expansion memory provisions are connected to said coupling facility while said second image memory provisions retain effective image data therein.

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28. A multi-function apparatus performing at least a copying function and optionally performing a facsimile function, comprising:

10 a basic memory including at least first image memory provisions for storing data related to the copying function;

a coupling facility for selectively connecting add-on expansion memory provisions thereto; and

15 a controller communicating with said basic memory and said coupling facility and configured to respond to a connection of said expansion memory provisions to said coupling facility by (a) arranging memory assignments of said basic memory and said expansion memory provisions in accordance with a predetermined memory map such that second  
20 image memory provisions are allocated within said basic memory and said expansion memory provisions related to said optional facsimile function, and (b) enabling performance of the optional facsimile function by said apparatus.

29. A method of providing at least copying and facsimile functions in a multi-function apparatus comprising:

allocating resources of a basic memory to provide  
5 first memory provisions for storing data related to the copying function and second memory provisions for storing data related to the facsimile function;

selectively connecting expansion memory provisions to said apparatus;

10 automatically determining whether or not said expansion memory provisions are connected and (a) responding to a determination that the expansion memory provisions are not connected by arranging memory assignments of said basic memory in accordance with a  
15 first memory map to effectively perform operations of the copying and facsimile functions, and (b) responding to a determination that the expansion memory provisions are connected to rearrange said memory assignments of said basic memory and arrange memory assignments of said  
20 expansion memory provisions to store data related to the copying and facsimile functions in accordance with a second memory map, different from said first map, to thereby effectively perform said operations of the copying and facsimile functions in a different manner.

30. A method of performing at least a copying function and an optional facsimile function in a multi-function apparatus comprising:

5 providing a basic memory for storing data related at least to the copying function;

selectively connecting add-on expansion memory provisions to said apparatus;

10 automatically determining whether or not the expansion memory provisions are connected to said apparatus and, in response to a determination that they are connected, arranging memory assignments of said basic memory and said expansion memory provisions in accordance with a predetermined memory to (a) allocate memory  
15 resources of the basic memory for the optional facsimile function, and (b) enable performance of said optional facsimile function.

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